Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0272591**
Facility Type	**Industrial**	APS ID	**1092847**
Major / Minor	**Minor**	Authorization ID	**1447337**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Hickory Run Energy LLC**	Facility Name	**Hickory Run Energy Station**
Applicant Address	7500 College Boulevard Suite 400	Facility Address	4900 Edinburg Road
	Overland Park, KS 66210-4016		New Castle, PA 16102-2752
Applicant Contact	Brock Shealy	Facility Contact	Jason Fox
Applicant Phone	(913) 754-5706	Facility Phone	(724) 262-6602
Client ID	298697	Site ID	765898
SIC Code	4911	Municipality	North Beaver Township
SIC Description	Trans. & Utilities - Electric Services	County	Lawrence
Date Application Received	June 21, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES renewal for IW and IW Stormwater.

Summary of Review

Hickory Run Energy Station is a natural gas-fired combined cycle electric generation facility, SIC Code: 4911, which is included under appendix H of the PAG-03 general stormwater permit for industrial activities. It generates 1,000 MW of power by burning natural gas and employs a cooling tower to dissipate heat, which produces non-contact cooling water as waste.

This facility uses grey water received from the New Castle Sanitation Authority, which is treated at Hickory Run and used as plant service water in steam turbine systems as well as the fire hydrants ("Service Water") under a beneficial use permit (WMGM049). Treatment consists of a moving bed bio-reactor (MBBR) for BOD removal and nitrification. It then passes through chlorine treatment and chemical filtration to remove particulates, pH adjustment, clarifier, filtration and then pumped to a holding tank. The water in this holding tank is known as "Treated Water", which is the cooling tower makeup water ultimately discharged through outfall 001. The treated water is then refined to become "Service Water" by passing it through ultra-filtration system and then reverse osmosis. This service water is held in a holding tank for fire water and other uses. Service water is used in hydrant flushings and is allowed as non-stormwater discharges, which go to Outfalls 002 & 003. The service water contains no known pollutants at levels of concern.

Sludge is disposed of at a landfill.

This site was last inspected on January 30, 2025.

There are currently no open violations for this client (298697) as of 2/24/2026.

The following files are attached, in this order, at the end of the fact sheet: the Acrylamide Usage Estimate, the Thermal Limits Spreadsheet outputs, and the Toxics Management Spreadsheet outputs.

Approve	Deny	Signatures	Date
X		Jordan A. Frey, E.I.T. Jordan A. Frey, E.I.T. / Project Manager	February 24, 2026
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	April 7, 2026

Summary of Review

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.3
Latitude	40º 59' 42.51"	Longitude	-80º 25' 2.60"
Quad Name	Bessemer	Quad Code	40080H4
Wastewater Description:	Noncontact Cooling Water (NCCW) & Misc. Low Volume Wastewater		
Receiving Waters	Unnamed Tributary to Mahoning River (WWF)	Stream Code	35393
NHD Com ID	133681189	RMI	4.5
Drainage Area	1110	Yield (cfs/mi^2)	0.04
Q_{7-10} Flow (cfs)	44.4	Q_{7-10} Basis	Streamstats
Elevation (ft)	779	Slope (ft/ft)	---
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS		
Source(s) of Impairment	AGRICULTURE		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.3	Same value used in the previous evaluation
Temperature (°F)	25	Default temp for a WWF stream
Hardness (mg/L)	170	Same value used in the previous evaluation
Other:		

Nearest Downstream Public Water Supply Intake	Beaver Falls Mun Auth - Eastvale Plant		
PWS Waters	Beaver River	Flow at Intake (cfs)	561
PWS RMI	5	Distance from Outfall (mi)	19.2

Changes Since Last Permit Issuance: None.

Other Comments: None.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 59' 25.36"	Longitude	-80º 25' 32.81"
Quad Name	Bessemer	Quad Code	40080H4
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Mahoning River (WWF)	Stream Code	35432
NHD Com ID	125560990	RMI	
Drainage Area	0.12	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	---
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS		
Source(s) of Impairment	AGRICULTURE		
TMDL Status		Name	

Changes Since Last Permit Issuance: Amended in July, 2022 to add non-stormwater discharges from this outfall.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 59' 25.36"	Longitude	-80º 25' 32.81"
Quad Name	Bessemer	Quad Code	40080H4
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Mahoning River (WWF)	Stream Code	35393
NHD Com ID			
Drainage Area	0.12		
Q_{7-10} Flow (cfs)			
Elevation (ft)			
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS		
Source(s) of Impairment	AGRICULTURE		
TMDL Status		Name	

Changes Since Last Permit Issuance: Amended in July, 2022 to add non-stormwater discharges from this outfall. This outfall only receives stormwater from the Outfall 002 emergency spillway.

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	1.3
Latitude	40º 59' 49.75"	**Longitude**	-80º 24' 54.15"

Wastewater Description: Noncontact Cooling Water (NCCW), Cooling Tower Blowdown

Technology-Based Limitations

Federal Effluent Limitations Guidelines (ELGs)

The process wastewater related to 40 CFR 423 Steam Electric Generating Category discharges via Outfall 001. The ELGs applicable to this process discharge will be imposed at that outfall.

Limits on Total Suspended Solids (TSS) and Oil & Grease are imposed according to 40 CFR 423.12(b)(3), as this discharge meets the specialized definition of a low volume waste source per 40 CFR 423.11(b).

The existing effluent limits for Free available chlorine are imposed according to 40 CFR 423.13(d)(1).

Limits on Total Copper and Total Iron according to 40 CFR 423.13(e) for all discharges of metal cleaning wastes were considered but are not viewed as applicable to this facility's discharge by the Department. Section 3.2.6 – Metal Cleaning, of EPA's 821-R-09-008 "Steam Electric Power Generation Point Source Category: Final Detailed Study states "The major constituents of boiler cleaning wastes are the metals of which the boiler is constructed, typically iron, copper, nickel, and zinc." as the ELG is intended for cleaning boiler components, which this facility does not discharge.

Limits of non-detect are imposed for the 126 pollutants contained in chemicals added for cooling tower maintenance, except for Total Chromium and Total Zinc, which shall be 0.2 mg/l and 1.0 mg/l respectively, per 40 CFR 423.15(a)(10).

DEP's Thermal Limits Spreadsheet results do not recommend temperature limits, but monitoring will be imposed. Temperature limits will be imposed per the Department's "Implementation Guidance for Temperature Criteria". As a policy, DEP normally imposes a maximum temperature limit of 110° F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water.

Regulatory Effluent Standards and Monitoring Requirements

25 PA Code Chapter 92a.48(a)(2) requires pH to limited to a minimum of 6.0 and a maximum of 9.0 S.U. for industrial waste discharges.

25 PA Code Chapter 95.10 requires Total Dissolved Solids (TDS) monitoring at minimum if the concentration exceeds 1,000 mg/l. The maximum discharge of TDS reported in this facility's DMRs was 4445 mg/l, so monitoring will be imposed. It is noted for future reference that TDS is concentrated during the production process at Hickory Run, which explains why discharge levels of TDS are significantly higher than the TDS reported on the application sample of their supplied water. It is also noted that Hickory Run has a TDS limit of 5000mg/l in their Title V air permit for the cooling tower, which they estimate based on a correlation study mathematically comparing TDS to conductivity. Hickory Run measures conductivity in the treated water tank for cooling tower makeup and de-ionized water supply, with a correlation factor of roughly 0.68 versus conductivity. Hickory Run is an included part of the New Castle Sanitation Authority's Wasteload Allocation (WLA) for Total Dissolved Solids, which is 75,000 lbs/day, and Hickory Run's current discharged levels of TDS are well within the WLA.

Parameter	Daily Maximum (mg/l)	Average Monthly (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
Free Available Chlorine	0.5	0.2
Chromium, Total	0.2	0.2
Zinc, Total	1.0	1.0
Temperature	Report	Report
TDS	Report	Report

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts. Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Hickory Run Energy's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's guidance, the permittee does not operate in one of the industries EPA expects to be a source for PFAS. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032. Even though the permittee did not report results for PFOA, PFOS, PFBS, and HFPO-DA on the permit application, as a facility operating in a suspected non-source industry, it is reasonable to conclude that if the permittee did report results for PFOA, PFOS, PFBS, and HFPO-DA on the application, the results may have been non-detect values, which would subject the permittee to the annual monitoring requirements described in Section II.I.b of the SOP.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results in this case), then the monitoring may be discontinued.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Hexavalent Chromium	Report	Average Quarterly	Toxics Management Spreadsheet, v 1.3

Comments: The Toxics Management Spreadsheet recommended an effluent limit for Acrylamide of 7.19 µg/l because the spreadsheet has a Quantitation Limit (TQL) of 0.1µg/l by default, but the Department does not officially have a QL for this parameter. Most labs can't test for concentrations below 200µg/l in a wastewater sample of this quality. Hickory Run informed the Department that one of their additives contains acrylamide polymer and verified with their vendor that it contains less than 100ppm of acrylamide, and by examining a mass balance of their polymer quantities used shows that Hickory Run does not generate enough acrylamide from their polymer usage to exceed the limit recommended by TMS. The mass balance shows 1.6ppb as a maximum, which is below 10% of the in-stream water quality criteria. Hickory Run took additional samples for acrylamide, which were non-detect. The Department is satisfied that these results demonstrate no reasonable potential, and will not impose effluent limits on Acrylamide.

Thermal WQBELs are evaluated using a DEP program called "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate ($Q_{7\text{-}10}$ or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures. This facility is a Case 2 analysis because it sources its raw water from the New Castle Sanitation Authority. Analysis results were 110°F, which is the spreadsheet maximum by default, so only monitoring shall be imposed.

This site also contains a 1,000 GPD package sewage treatment system consisting of a manual bar screen, 600-gallon EQ tank, 325-gallon sludge holding tank, 167-gallon clarifier, 1,013-gallon extended aeration tank and a 325-gallon chlorine contact tank (tablet chlorine). This will be followed by an effluent dosed, 270-sq. ft. CO-OP RFS III recirculating sand filter. This system is permitted under WQG01371801. The treated wastewater is pumped to the energy station's treatment plant site for use as additional non-contact cooling water. Because the 1,000 GPD design flow is insignificant compared to the 1.3 MGD of the facility's NCCW discharge, and Free Available Chlorine is already established as a limit, Total Residual Chlorine (TRC) limits are deemed unnecessary. Because of the insignificance of the sewage flow, and because the wastewater will be boiled in the energy station, limits for CBOD5 are also deemed unnecessary.

Hexavalent Chromium had a detection in the application sampling. The lab utilized by Hickory Run is only capable of a 6.0µg/l Quantitation Limit for Hexavalent Chromium, which is still high enough to exceed 10% of the water quality criteria. As such, it cannot be demonstrated that there is no reasonable potential, and monitoring shall be imposed. Since Hickory Run already samples for Total Chromium as part of their regular sampling, Hexavalent Chromium sampling shall only be required quarterly.

Best Professional Judgment (BPJ) Limitations

Comments: N/A

Anti-Backsliding

N/A

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0
Latitude 40º 59' 41.80" **Longitude** -80º 25' 41.30"
Wastewater Description: Stormwater

Technology-Based Limitations

The monitoring requirements of the PAG-03 General Stormwater Permit shall be imposed on stormwater discharges from Outfall 002 as a minimum requirement. The Site SIC code is 4911, so PAG-03 Appendix H contains the applicable monitoring requirements. Those requirements are in the following table:

Pollutant	Monitoring Requirements [1],[2]		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L) [3]	1 / 6 months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 months	Grab	XXX
pH (S.U.)	1 / 6 months	Grab	9.0
Total Suspended Solids (TSS) (mg/L)	1 / 6 months	Grab	100
Oil and Grease (mg/L)	1 / 6 months	Grab	30
Total Iron (mg/L)	1 / 6 months	Grab	XXX

Footnotes

(1) In accordance with Part C V.C, the permittee shall conduct additional monitoring if specified by DEP in the letter authorizing permit coverage or other correspondence.

(2) This is the minimum number of sampling events required. Permittees may optionally perform additional sampling.

(3) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

Water Quality-Based Limitations

Not applicable to stormwater-only outfalls.

Development of Effluent Limitations

Outfall No. 003 **Design Flow (MGD)** 0
Latitude 40º 59' 41.80" **Longitude** -80º 25' 41.31"
Wastewater Description: Stormwater

Technology-Based Limitations

The monitoring requirements of the PAG-03 General Stormwater Permit shall be imposed on stormwater discharges from Outfall 003 as a minimum requirement. The Site SIC code is 4911, so PAG-03 Appendix H contains the applicable monitoring requirements. Those requirements are in the following table:

Pollutant	Monitoring Requirements [1],[2]		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L) [3]	1 / 6 months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 months	Grab	XXX
pH (S.U.)	1 / 6 months	Grab	9.0
Total Suspended Solids (TSS) (mg/L)	1 / 6 months	Grab	100
Oil and Grease (mg/L)	1 / 6 months	Grab	30
Total Iron (mg/L)	1 / 6 months	Grab	XXX

Footnotes

(1) In accordance with Part C V.C, the permittee shall conduct additional monitoring if specified by DEP in the letter authorizing permit coverage or other correspondence.

(2) This is the minimum number of sampling events required. Permittees may optionally perform additional sampling.

(3) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

Water Quality-Based Limitations

Not applicable to stormwater-only outfalls.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	2/month	Grab
Free Available Chlorine	XXX	XXX	XXX	0.2	0.5	XXX	2/month	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	XXX	110	2/month	I-S
TSS	XXX	XXX	XXX	30	100	100	2/month	Grab
Total Dissolved Solids	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Oil and Grease	XXX	XXX	XXX	15	20	30	2/month	Grab
Chromium, Hexavalent (ug/L)	XXX	XXX	XXX	Report Avg Qrtly	Report	XXX	1/quarter	Grab
Chromium, Total	XXX	XXX	XXX	0.2	0.2	XXX	2/month	Grab
Zinc, Total	XXX	XXX	XXX	1.0	1.0	XXX	2/month	Grab
PFOA (ng/L)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001, prior to mixing with any other waters.

Other Comments: (1) In accordance with Part C V.C, the permittee shall conduct additional monitoring if specified by DEP in the letter authorizing permit coverage or other correspondence.

(2) This is the minimum number of sampling events required. Permittees may optionally perform additional sampling.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Nitrogen (mg.L) (3)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 002, prior to mixing with any other waters.

Other Comments: (1) In accordance with Part C V.C, the permittee shall conduct additional monitoring if specified by DEP in the letter authorizing permit coverage or other correspondence.

(2) This is the minimum number of sampling events required. Permittees may optionally perform additional sampling.

(3) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 003, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Nitrogen (mg.L) (3)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 003, prior to mixing with any other waters.

Other Comments: (1) In accordance with Part C V.C, the permittee shall conduct additional monitoring if specified by DEP in the letter authorizing permit coverage or other correspondence.

(2) This is the minimum number of sampling events required. Permittees may optionally perform additional sampling.

(3) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

Actual	AE1702 Polymer Projected Discharge levels based on 2024 data
3562	5,475 *Gallons AE1702 polymer per year consumed based on 15 gal/day - max daily ppm rate (3.8 ppm) - **plant setpoint is between 0.75 - 1.5 ppm
	331,981,310 2024 cooling tower blowdown total gallons
	1,103,111,133 2024 water consumed in cooling tower by evaporation
	1,435,092,443 2024 water purchased and treated from New Castle Sanitation Authority
	3,931,760 Average influent water treated per day
	3.82 Avreage rate (ppm AE1702 based on estimate 15 gal/day/365 days use)
	0.00038 Average rate of acrylamide (ppm) based on estimate 15 gal/day use @ <100ppm)
	16.5 average ppm (mg/l)of AE1702 polymer discharged (assuming none is consumed)
	0.0016 average ppm (mg/l) value of acrylamide discharged in blowdown (assuming none is consumed)
	1.65 average ppb (ug/l) value of acrylamide discharged (assuming none is consumed)
	0.165 average ppb (ug/l) value of acrylamide discharged (assuming 90% is consumed - Veolia estimate)

* Have used approximately 1800 gallons of AE1702 through June-2025 based on invoicing. Station has incurred very mininmal downtime in 2025 to date

** Setpoint generally at 0.8 to 1.0 ppm but will increase with poor influent water quality to achieve required results. In summer, station takes all the water it can however in winter, station can stop receiving influent water when quality degrades.

AE1702 Polymer Projected Discharge levels based on 2025 data through June
1,530 Gallons AE1702 polymer per year consumed through June 2025 (estimate based on purchasing/invoicing)
139,590,991 2025 cooling tower blowdown total gallons through June 2025
661,017,290 2025 water consumed in cooling tower by evaporation through June
800,608,281 2025 water purchased and treated from New Castle Sanitation Authority through June
771,221 Average influent water treated per day
1.91 Avreage rate (ppm AE1702 based on 1800 gallons use through June)
0.00019 Average rate of acrylamide (ppm) based on 1800 gallons @ <100ppm)
11.0 average ppm (mg/l)of AE1702 polymer discharged (assuming none is consumed)
0.0011 average ppm (mg/l) value of acrylamide discharged in blowdown (assuming none is consumed)
1.10 average ppb (ug/l) value of acrylamide discharged (assuming none is consumed)
0.110 average ppb (ug/l) value of acrylamide discharged (assuming 90% is consumed - Veolia estimate)

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Instructions | *Inputs*

Facility: **Hickory Run Energy Station**

Permit No.: **PA0272591**

Stream Name: **Unnamed Trib to Mahoning River (35393)**

Analyst/Engineer: **Jordan Frey**

Stream Q7-10 (cfs)*: **44.4**

Outfall No.: **001**

Analysis Type*: **WWF**

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31		1.3		1.3
Feb 1-29		1.3		1.3
Mar 1-31		1.3		1.3
Apr 1-15		1.3		1.3
Apr 16-30		1.3		1.3
May 1-15		1.3		1.3
May 16-31		1.3		1.3
Jun 1-15		1.3		1.3
Jun 16-30		1.3		1.3
Jul 1-31		1.3		1.3
Aug 1-15		1.3		1.3
Aug 16-31		1.3		1.3
Sep 1-15		1.3		1.3
Sep 16-30		1.3		1.3
Oct 1-15		1.3		1.3
Oct 16-31		1.3		1.3
Nov 1-15		1.3		1.3
Nov 16-30		1.3		1.3
Dec 1-31		1.3		1.3

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	142.08	144.09
3.5	1.00	155.40	157.41
7	1.00	310.80	312.81
9.3	1.00	412.92	414.93
9.3	1.00	412.92	414.93
5.1	1.00	226.44	228.45
5.1	1.00	226.44	228.45
3	1.00	133.20	135.21
3	1.00	133.20	135.21
1.7	1.00	75.48	77.49
1.4	1.00	62.16	64.17
1.4	1.00	62.16	64.17
1.1	1.00	48.84	50.85
1.1	1.00	48.84	50.85
1.2	1.00	53.28	55.29
1.2	1.00	53.28	55.29
1.6	1.00	71.04	73.05
1.6	1.00	71.04	73.05
2.4	1.00	106.56	108.57

Thermal Limits Spreadsheet
Version 1.0, April 2024

Temperature

Ambient Stream Temperature (°F)*

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Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *WWF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**WWF** Target Maximum Stream Temp. (°F)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (°F)
Jan 1-31	40	N/A -- Case 2	110.0
Feb 1-29	40	N/A -- Case 2	110.0
Mar 1-31	46	N/A -- Case 2	110.0
Apr 1-15	52	N/A -- Case 2	110.0
Apr 16-30	58	N/A -- Case 2	110.0
May 1-15	64	N/A -- Case 2	110.0
May 16-31	72	N/A -- Case 2	110.0
Jun 1-15	80	N/A -- Case 2	110.0
Jun 16-30	84	N/A -- Case 2	110.0
Jul 1-31	87	N/A -- Case 2	110.0
Aug 1-15	87	N/A -- Case 2	110.0
Aug 16-31	87	N/A -- Case 2	110.0
Sep 1-15	84	N/A -- Case 2	110.0
Sep 16-30	78	N/A -- Case 2	110.0
Oct 1-15	72	N/A -- Case 2	110.0
Oct 16-31	66	N/A -- Case 2	110.0
Nov 1-15	58	N/A -- Case 2	110.0
Nov 16-30	50	N/A -- Case 2	110.0
Dec 1-31	42	N/A -- Case 2	110.0

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Hickory Run Energy Station** NPDES Permit No.: **PA0272591** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Non-contact cooling water**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.3	865	7.64						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		3480									
	Chloride (PWS)	mg/L		1090									
	Bromide	mg/L	<	0.5									
	Sulfate (PWS)	mg/L		637									
	Fluoride (PWS)	mg/L		1.35									
Group 2	Total Aluminum	µg/L		12.5									
	Total Antimony	µg/L		5.2									
	Total Arsenic	µg/L		2.2									
	Total Barium	µg/L		101									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		1140									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	10									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L		2.7									
	Total Copper	µg/L		22.5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		0.017									
	Dissolved Iron	µg/L		470									
	Total Iron	µg/L		1610									
	Total Lead	µg/L		2.51									
	Total Manganese	µg/L		127									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L		16.9									
	Total Phenols (Phenolics) (PWS)	µg/L	<	8									
	Total Selenium	µg/L	<	2.9									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		190									
	Total Molybdenum	µg/L		260									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	19									
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.2									
	Chlorobenzene	µg/L		0.2									
	Chlorodibromomethane	µg/L	<	0.4									
	Chloroethane	µg/L	<	0.2									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L		2.2									
	Dichlorobromomethane	µg/L	<	0.2									
	1,1-Dichloroethane	µg/L	<	0.2									
	1,2-Dichloroethane	µg/L	<	0.2									
	1,1-Dichloroethylene	µg/L	<	0.2									
	1,2-Dichloropropane	µg/L	<	0.2									
	1,3-Dichloropropylene	µg/L	<	0.2									
	1,4-Dioxane	µg/L	<	0.1									
	Ethylbenzene	µg/L	<	0.2									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.2									
	Methylene Chloride	µg/L	<	0.4									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2									
	Tetrachloroethylene	µg/L	<	0.4									
	Toluene	µg/L	<	0.2									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.2									
	1,1,2-Trichloroethane	µg/L	<	0.2									
	Trichloroethylene	µg/L	<	0.2									
	Vinyl Chloride	µg/L	<	0.2									
Group 4	2-Chlorophenol	µg/L		1.5									
	2,4-Dichlorophenol	µg/L	<	0.2									
	2,4-Dimethylphenol	µg/L	<	0.2									
	4,6-Dinitro-o-Cresol	µg/L	<	1.02									
	2,4-Dinitrophenol	µg/L	<	1.02									
	2-Nitrophenol	µg/L	<	0.51									
	4-Nitrophenol	µg/L	<	0.51									
	p-Chloro-m-Cresol	µg/L	<	0.2									
	Pentachlorophenol	µg/L	<	0.51									
	Phenol	µg/L	<	0.8									
	2,4,6-Trichlorophenol	µg/L	<	0.2									
Group 5	Acenaphthene	µg/L	<	0.1									
	Acenaphthylene	µg/L	<	0.1									
	Anthracene	µg/L	<	0.1									
	Benzidine	µg/L	<	0.51									
	Benzo(a)Anthracene	µg/L	<	0.1									
	Benzo(a)Pyrene	µg/L	<	0.1									
	3,4-Benzofluoranthene	µg/L	<	0.1									
	Benzo(ghi)Perylene	µg/L	<	0.1									
	Benzo(k)Fluoranthene	µg/L	<	0.1									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.1									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.1									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.1									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.04									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.1									
	Butyl Benzyl Phthalate	µg/L	<	1.02									
	2-Chloronaphthalene	µg/L	<	0.1									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.1									
	Chrysene	µg/L	<	0.1									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.1									
	1,2-Dichlorobenzene	µg/L	<	0.1									
	1,3-Dichlorobenzene	µg/L	<	0.1									
	1,4-Dichlorobenzene	µg/L	<	0.1									
	3,3-Dichlorobenzidine	µg/L	<	0.51									
	Diethyl Phthalate	µg/L	<	1.02									
	Dimethyl Phthalate	µg/L	<	1.02									
	Di-n-Butyl Phthalate	µg/L	<	1.02									
	2,4-Dinitrotoluene	µg/L	<	0.2									

	2,6-Dinitrotoluene	µg/L	<	0.2									
	Di-n-Octyl Phthalate	µg/L	<	1.02									
	1,2-Diphenylhydrazine	µg/L	<	0.1									
	Fluoranthene	µg/L	<	0.1									
	Fluorene	µg/L	<	0.1									
	Hexachlorobenzene	µg/L	<	0.1									
	Hexachlorobutadiene	µg/L	<	0.1									
	Hexachlorocyclopentadiene	µg/L	<	0.51									
	Hexachloroethane	µg/L	<	0.1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.1									
	Isophorone	µg/L	<	0.2									
	Naphthalene	µg/L	<	0.1									
	Nitrobenzene	µg/L	<	0.1									
	n-Nitrosodimethylamine	µg/L	<	0.1									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.1									
	n-Nitrosodiphenylamine	µg/L	<	0.1									
	Phenanthrene	µg/L	<	0.1									
	Pyrene	µg/L	<	0.1									
	1,2,4-Trichlorobenzene	µg/L	<	0.1									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Hickory Run Energy Station , NPDES Permit No. PA0272591, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Mahoning River**

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	035393	4.006	779	1110			Yes
End of Reach 1	035393	2.75	774	1112			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	4.006	0.04										100	7		
End of Reach 1	2.75	0.04													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	4.006														
End of Reach 1	2.75														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Hickory Run Energy Station , NPDES Permit No. PA0272591, Outfall 001

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.147 Analysis Hardness (mg/l): 279.84 Analysis pH: 7.09

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	3,190	
Total Antimony	0	0		0	1,100	1,100	4,679	
Total Arsenic	0	0		0	340	340	1,446	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	89,331	
Total Boron	0	0		0	8,100	8,100	34,456	
Total Cadmium	0	0		0	5.471	6.07	25.8	Chem Translator of 0.901 applied
Total Chromium (III)	0	0		0	1323.458	4,188	17,816	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	69.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	404	
Total Copper	0	0		0	35.436	36.9	157	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	193.972	303	1,287	Chem Translator of 0.641 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	7.01	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1118.270	1,121	4,766	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	18.884	22.2	94.5	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	277	
Total Zinc	0	0		0	280.232	287	1,219	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	12.8	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	2,765	
Benzene	0	0		0	640	640	2,722	
Bromoform	0	0		0	1,800	1,800	7,657	
Carbon Tetrachloride	0	0		0	2,800	2,800	11,911	
Chlorobenzene	0	0		0	1,200	1,200	5,105	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	76,569	
Chloroform	0	0		0	1,900	1,900	8,082	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	63,808	
1,1-Dichloroethylene	0	0		0	7,500	7,500	31,904	
1,2-Dichloropropane	0	0		0	11,000	11,000	46,792	
1,3-Dichloropropylene	0	0		0	310	310	1,319	
Ethylbenzene	0	0		0	2,900	2,900	12,336	
Methyl Bromide	0	0		0	550	550	2,340	
Methyl Chloride	0	0		0	28,000	28,000	119,108	
Methylene Chloride	0	0		0	12,000	12,000	51,046	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	4,254	
Tetrachloroethylene	0	0		0	700	700	2,978	
Toluene	0	0		0	1,700	1,700	7,232	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	28,926	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	12,762	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	14,463	
Trichloroethylene	0	0		0	2,300	2,300	9,784	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	2,382	
2,4-Dichlorophenol	0	0		0	1,700	1,700	7,232	
2,4-Dimethylphenol	0	0		0	660	660	2,808	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	340	
2,4-Dinitrophenol	0	0		0	660	660	2,808	
2-Nitrophenol	0	0		0	8,000	8,000	34,031	
4-Nitrophenol	0	0		0	2,300	2,300	9,784	
p-Chloro-m-Cresol	0	0		0	160	160	681	
Pentachlorophenol	0	0		0	9.519	9.52	40.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,957	
Acenaphthene	0	0		0	83	83.0	353	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	1,276	
Benzo(a)Anthracene	0	0		0	0.5	0.5	2.13	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	127,615	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	19,142	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	1,149	

Butyl Benzyl Phthalate	0	0		0	140	140	596	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	3,488	
1,3-Dichlorobenzene	0	0		0	350	350	1,489	
1,4-Dichlorobenzene	0	0		0	730	730	3,105	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	17,015	
Dimethyl Phthalate	0	0		0	2,500	2,500	10,635	
Di-n-Butyl Phthalate	0	0		0	110	110	468	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	6,806	
2,6-Dinitrotoluene	0	0		0	990	990	4,211	
1,2-Diphenylhydrazine	0	0		0	15	15.0	63.8	
Fluoranthene	0	0		0	200	200	851	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	42.5	
Hexachlorocyclopentadiene	0	0		0	5	5.0	21.3	
Hexachloroethane	0	0		0	60	60.0	255	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	42,538	
Naphthalene	0	0		0	140	140	596	
Nitrobenzene	0	0		0	4,000	4,000	17,015	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	72,315	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	1,276	
Phenanthrene	0	0		0	5	5.0	21.3	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	553	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 133.15 Analysis pH: 7.01

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	5,077	
Total Arsenic	0	0		0	150	150	3,462	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	94,618	
Total Boron	0	0		0	1,600	1,600	36,924	
Total Cadmium	0	0		0	0.300	0.33	7.72	Chem Translator of 0.897 applied
Total Chromium (III)	0	0		0	93.699	109	2,514	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	240	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	438	
Total Copper	0	0		0	11.438	11.9	275	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	34,616	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.432	4.58	106	Chem Translator of 0.749 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	20.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	66.260	66.5	1,534	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	115	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	300	
Total Zinc	0	0		0	150.572	153	3,524	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	69.2	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	3,000	
Benzene	0	0		0	130	130	3,000	
Bromoform	0	0		0	370	370	8,539	
Carbon Tetrachloride	0	0		0	560	560	12,923	
Chlorobenzene	0	0		0	240	240	5,539	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	80,771	
Chloroform	0	0		0	390	390	9,000	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	71,540	
1,1-Dichloroethylene	0	0		0	1,500	1,500	34,616	
1,2-Dichloropropane	0	0		0	2,200	2,200	50,770	
1,3-Dichloropropylene	0	0		0	61	61.0	1,408	
Ethylbenzene	0	0		0	580	580	13,385	
Methyl Bromide	0	0		0	110	110	2,539	
Methyl Chloride	0	0		0	5,500	5,500	126,926	
Methylene Chloride	0	0		0	2,400	2,400	55,386	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	4,846	
Tetrachloroethylene	0	0		0	140	140	3,231	
Toluene	0	0		0	330	330	7,616	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	32,308	
1,1,1-Trichloroethane	0	0		0	610	610	14,077	
1,1,2-Trichloroethane	0	0		0	680	680	15,693	
Trichloroethylene	0	0		0	450	450	10,385	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	2,539	
2,4-Dichlorophenol	0	0		0	340	340	7,846	
2,4-Dimethylphenol	0	0		0	130	130	3,000	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	369	
2,4-Dinitrophenol	0	0		0	130	130	3,000	

2-Nitrophenol	0	0		0	1,600	1,600	36,924	
4-Nitrophenol	0	0		0	470	470	10,846	
p-Chloro-m-Cresol	0	0		0	500	500	11,539	
Pentachlorophenol	0	0		0	7.303	7.3	169	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	2,100	
Acenaphthene	0	0		0	17	17.0	392	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	1,362	
Benzo(a)Anthracene	0	0		0	0.1	0.1	2.31	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	138,465	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	21,000	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	1,246	
Butyl Benzyl Phthalate	0	0		0	35	35.0	808	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	3,692	
1,3-Dichlorobenzene	0	0		0	69	69.0	1,592	
1,4-Dichlorobenzene	0	0		0	150	150	3,462	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	18,462	
Dimethyl Phthalate	0	0		0	500	500	11,539	
Di-n-Butyl Phthalate	0	0		0	21	21.0	485	
2,4-Dinitrotoluene	0	0		0	320	320	7,385	
2,6-Dinitrotoluene	0	0		0	200	200	4,615	
1,2-Diphenylhydrazine	0	0		0	3	3.0	69.2	
Fluoranthene	0	0		0	40	40.0	923	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	46.2	
Hexachlorocyclopentadiene	0	0		0	1	1.0	23.1	
Hexachloroethane	0	0		0	12	12.0	277	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	48,463	
Naphthalene	0	0		0	43	43.0	992	
Nitrobenzene	0	0		0	810	810	18,693	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	78,463	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	1,362	
Phenanthrene	0	0		0	1	1.0	23.1	

Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	600	

☑ ***THH*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	129	
Total Arsenic	0	0		0	10	10.0	231	
Total Barium	0	0		0	2,400	2,400	55,386	
Total Boron	0	0		0	3,100	3,100	71,540	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	6,923	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	23,077	
Total Mercury	0	0		0	0.050	0.05	1.15	
Total Nickel	0	0		0	610	610	14,077	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	5.54	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	69.2	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	2,308	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	762	

1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	1,569	
Methyl Bromide	0	0		0	100	100.0	2,308	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	1,315	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	2,308	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	230,775	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	692	
2,4-Dichlorophenol	0	0		0	10	10.0	231	
2,4-Dimethylphenol	0	0		0	100	100.0	2,308	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	46.2	
2,4-Dinitrophenol	0	0		0	10	10.0	231	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	92,310	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	1,615	
Anthracene	0	0		0	300	300	6,923	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	4,615	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	2.31	
2-Chloronaphthalene	0	0		0	800	800	18,462	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	23,077	
1,3-Dichlorobenzene	0	0		0	7	7.0	162	
1,4-Dichlorobenzene	0	0		0	300	300	6,923	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	13,846	

Dimethyl Phthalate	0	0		0	2,000	2,000	46,155	
Di-n-Butyl Phthalate	0	0		0	20	20.0	462	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	462	
Fluorene	0	0		0	50	50.0	1,154	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	92.3	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	785	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	231	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	462	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	1.62	

☑ ***CRL*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	7.19	
Acrylonitrile	0	0		0	0.06	0.06	6.16	
Benzene	0	0		0	0.58	0.58	59.6	
Bromoform	0	0		0	7	7.0	719	
Carbon Tetrachloride	0	0		0	0.4	0.4	41.1	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	82.2	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	585	
Dichlorobromomethane	0	0		0	0.95	0.95	97.6	
1,2-Dichloroethane	0	0		0	9.9	9.9	1,017	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	92.4	
1,3-Dichloropropylene	0	0		0	0.27	0.27	27.7	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	2,054	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	20.5	
Tetrachloroethylene	0	0		0	10	10.0	1,027	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	56.5	
Trichloroethylene	0	0		0	0.6	0.6	61.6	
Vinyl Chloride	0	0		0	0.02	0.02	2.05	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	3.08	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	154	
Acenaphthene	0	0		0	N/A	N/A	N/A	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.01	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.1	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.01	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.1	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	1.03	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	3.08	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	32.9	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	12.3	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.01	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	5.14	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	5.14	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	5.14	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	3.08	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.008	
Hexachlorobutadiene	0	0		0	0.01	0.01	1.03	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	10.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.1	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.072	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.51	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	339	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	44.4	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	101	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	781	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.078	0.12	7.19	11.2	18.0	µg/L	7.19	CRL	Discharge Conc ≥ 50% WQBEL (RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	2,045	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	129	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	231	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	55,386	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	22,085	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	7.72	µg/L	Discharge Conc < TQL
Total Chromium (III)	2,514	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	259	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	6,923	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	34,616	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	106	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	23,077	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1.15	µg/L	Discharge Conc < TQL
Total Nickel	1,534	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	115	µg/L	Discharge Conc < TQL
Total Silver	60.6	µg/L	Discharge Conc < TQL
Total Thallium	5.54	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	8.18	µg/L	Discharge Conc < TQL
Acrylonitrile	6.16	µg/L	Discharge Conc < TQL
Benzene	59.6	µg/L	Discharge Conc < TQL
Bromoform	719	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	41.1	µg/L	Discharge Conc < TQL

Chlorobenzene	2,308	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	82.2	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	49,078	µg/L	Discharge Conc < TQL
Chloroform	585	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	97.6	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	1,017	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	762	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	92.4	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	27.7	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	1,569	µg/L	Discharge Conc < TQL
Methyl Bromide	1,500	µg/L	Discharge Conc < TQL
Methyl Chloride	76,343	µg/L	Discharge Conc < TQL
Methylene Chloride	2,054	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	20.5	µg/L	Discharge Conc < TQL
Tetrachloroethylene	1,027	µg/L	Discharge Conc < TQL
Toluene	1,315	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	2,308	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	8,180	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	56.5	µg/L	Discharge Conc < TQL
Trichloroethylene	61.6	µg/L	Discharge Conc < TQL
Vinyl Chloride	2.05	µg/L	Discharge Conc < TQL
2-Chlorophenol	692	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dichlorophenol	231	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	1,800	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	46.2	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	231	µg/L	Discharge Conc < TQL
2-Nitrophenol	21,812	µg/L	Discharge Conc < TQL
4-Nitrophenol	6,271	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	436	µg/L	Discharge Conc < TQL
Pentachlorophenol	3.08	µg/L	Discharge Conc < TQL
Phenol	92,310	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	154	µg/L	Discharge Conc < TQL
Acenaphthene	226	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	6,923	µg/L	Discharge Conc < TQL
Benzidine	0.01	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.1	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.01	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.1	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	1.03	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS

Bis(2-Chloroethyl)Ether	3.08	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	4,615	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	32.9	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	736	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	2.31	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	18,462	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	12.3	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.01	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	2,236	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	162	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,990	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	5.14	µg/L	Discharge Conc < TQL
Diethyl Phthalate	10,906	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	6,816	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	300	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	5.14	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	5.14	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	3.08	µg/L	Discharge Conc < TQL
Fluoranthene	462	µg/L	Discharge Conc < TQL
Fluorene	1,154	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.008	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	1.03	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	13.6	µg/L	Discharge Conc < TQL
Hexachloroethane	10.3	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.1	µg/L	Discharge Conc < TQL
Isophorone	785	µg/L	Discharge Conc < TQL
Naphthalene	382	µg/L	Discharge Conc < TQL
Nitrobenzene	231	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.072	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.51	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	339	µg/L	Discharge Conc < TQL
Phenanthrene	13.6	µg/L	Discharge Conc < TQL
Pyrene	462	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	1.62	µg/L	Discharge Conc < TQL